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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,017	04/16/2001	Ray E. Schemel	H003.P001U1	6537

7590

02/20/2004

Bryan W Bockhop
Arnall Golden Gregpry LLP
1201 West Peachtree Street
Atlanta, GA 30309

EXAMINER

NGUYEN, SIMON

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/762,017

Applicant(s)

SCHEMEL, RAY E.

Examiner

SIMON D NGUYEN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 (or 53-79) is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10,11 and 21-26 is/are allowed.
- 6) ☒ Claim(s) 1-9,12-20 and 27-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the previous claims does not disclose the step of inverting, a first path, a second path, and a first information-bearing signal.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 9, 12, 16-18, 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Stromswold et al. (4,247,937).

Regarding claim 1, Stromswold discloses a method for generating a signal for used in relation to a non-linear signal path (abstract, figs.1, 3, column 5 line 58), comprising: combining (mixing) an information-bearing signal (an incoming signal from an antenna) with an idle frequency (local oscillator 14) at a different frequency to

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generate a combined signal (# 18 of fig.1); doubling a phase angle of the combined signal to produce a neoteric signal (original signal) having a second phase angle (column 2 lines 5-32, column 5 lines 7-21, column 7 lines 6-10); utilizing the second phase angle as phase modulation in the neoteric signal (column 5 lines 39-61); ensuring that an envelope of the neoteric signal is constant in level (produce a linear FM signal) (column 4 line 39, column 5 lines 31-60).

Regarding claim 12, this claim is rejected for the same reason as set forth in claim 1, wherein the step of constraining a signal envelope (an output signal of mixer 12) to a constant level by limiters 43 and filters 33 for filtering the neoteric signal to recover the information (fig.2, column 6 lines 13-51. column 7 lines 5-17).

Regarding claim 16, this claim is rejected for the same reason as set forth in claim 1.

Regarding claim 27, this claim is rejected for the same reason as set forth in claim 12 wherein limiters are used for constraining a signal envelope (fig.2).

Regarding claims 2 and 17, Stromswold discloses the combined signal passing over an internal path (through narrow band filter 35) and the neoteric signal to an external path (a signal that goes to center frequency detector 29).

Regarding claim 3, Stromswold further discloses the combined signal and the neoteric signal are constrained (column 4 lines 35-44, column 6 line 58 to column 7 line 17).

Regarding claims 9, 18, and 29, Stromswold further discloses a frequency difference between central frequencies of the idle frequency and the information-bearing

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signal is selected that can be separated from a respective one of the information-bearing signal and the narrowband signal (selected by narrow band filter)(fig.1, column 5 lines 21-61).

Regarding claim 28, Stromswold further discloses dispersive delay 26 coupled between the doubler 24 and the narrow band filter 35 for converting signal (fig.1).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4-6, 8, 13-15, 19-20, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stromswold et al. (4,247,939) in view of Itoh et al. (5,787,126).

Regarding dependent claims 4-6, 8, 13-15, 19-20, 30-31, Stromswold does not specifically disclose the steps of determining a level of the information-bearing signal, selecting and controlling the amplitude of the idle frequency according to the level of the information-bearing signal, and an output is applied to an amplifier and a non-linear path. It should be noted that in order to recovery information from a received signal, the amplitude of the idle frequency (oscillator signal) has to be selected and controlled to mix with the information bearing signal to generate an output signal which is known to those skilled in the art.

Itoh discloses a transceiver apparatus of a wireless communication system in which a level of an information-bearing signal is determined by LNA2 and BPF 3 (figs.1, 28, 31, column 9 lines 47-54) and the amplitude of the idle frequency (LO) is controlled in response to the level of the information-bearing signal (fig.1, column 9 line 55 to column 11 line 25) and the combination of two signals is applied to amplifiers 10a-b and a non-linear path (figs.1, 28, 31, column 13 line 55). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have Stromswold, modified by Itoh in order to generate a desired output signal.

Allowable Subject Matter

7. Claims 10-11, 21-26 are allowed.
8. The following is an examiner's statement of reasons for allowance:

Regarding claims 10-11, 21, and 23, the prior art of record fails to disclose a method for generating a neoteric signal by taking frequency difference between the constrained first zone signal to the first chain and the intermediated signal, wherein the step of taking the difference effectively cancels AM to PM conversion introduced by processing in both the first chain and the second chain, wherein the first chain combining a first information-bearing signal with an idle frequency (LO) and wherein the second chain combining a second information-bearing signal with its idle frequency but in an opposite sense.

Regarding claims 22, 24-26, these claims are allowed as being dependent upon independent claims that have been allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Simon Nguyen whose telephone number is (703) 308-1116. The examiner can normally be reached on Monday-Friday from 7:00 AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban, can be reached on (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

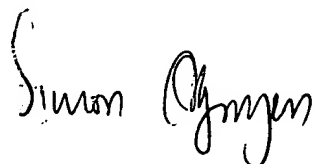
Or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Hand-delivered response should be brought to Crystal Park II,
2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Simon Nguyen

February 19, 2004

A handwritten signature in black ink, appearing to read "Simon Nguyen", is written over the typed name and date.